# *MELAMPODIUM MOCTEZUMUM* (ASTERACEAE: HELIANTHEAE), A NEW SPECIES FROM SONORA, MEXICO

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## ABSTRACT

A new species, *Melampodium moctezumum*, is described from Mpio. de Moctezuma, Sonora, Mexico and Cochise County, southeastern Arizona, U.S.A. It is closely related to the more southwestern *M. cupulatum* but can be distinguished from that taxon by several features, most notably by its broader, coarser, more venose, markedly lobed leaves.

**KEY WORDS:** Asteraceae, Heliantheae, *Melampodium*, Mexico, Sonora, Arizona.

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Routine identifications from Sonora, Mexico and the southwestern U.S.A. have revealed the following novelty:

**Melampodium moctezumum** B. L. Turner, **sp. nov.**

*Melampodio cupulatum* A. Gray similis sed foliis laminis venosis valde lobatis (vs. integris) in petiolos tenues gradatim descrescentibus (vs. subsessilibus vel brevipetiolatis) et flosculis radii plerumque 2-6 mm longis (vs 5-10 mm).

**Annual herbs** 15-45 cm high. **Stems** reddish, erect, 1-4 mm diameter, sparsely pubescent to glabrous. **Larger mid-stem leaves** 4-6 cm long, 1.0-1.8 cm wide; petioles 0.3-2.0 cm long, the blades markedly venose with lobed or irregularly serrate margins, appressed-pilose and punctate-glandular on both surfaces. **Peduncles** 2-7 cm long. **Heads** 6-9 mm high, 8-20 mm wide (with rays expanded). **Outer involucral bracts** 5, broadly ovate, ca 5 mm high, connate for 2/3-4/5 their length,

their margins scarious. **Receptacle** conical, ca 6 mm high, 2 mm wide. **Pales** oblanceolate, 3-4 mm long with flabellate, fimbriate, yellow-orange apices. **Ray florets**12-15; ligules "yellow-orange," 2(3)-6(7) mm long, 1-2 mm wide. **Disk florets** numerous; corollas yellow-orange. **Achenes** 3-4 mm long, somewhat falcate laterally, markedly tuberculate, epappose, hoodless.

TYPE: **MEXICO. SONORA:** Mpio. de Moctezuma, 13.7 km NNW of Tepache on road to Moctezuma (Son 117), sparse scrub on basalt cobble plain, 730 m, 17 Aug 2003, *A. L. Reina G. 2003-943* (with T. R. Van Devender and Z. Liu). (Holotype: TEX; isotype: ARIZ).

ADDITIONAL COLLECTIONS EXAMINED (TEX): **MEXICO. SONORA**: Mpio. de Moctezuma, 18.1 km SSE of Moctezuma, "locally common annual," 14 Aug 2006, *Reina 2006-486*; 21.4 km SSE of Moctezuma, 697 m, 19 Oct 2003, *Van Devender 2003-1228* (with A. L. Reina); 19.6 km SSE of Moctezuma, on road to Tepache, 19 Oct 2003, *Van Devender 2003-1230*; 18.9 km SSE of Junction with Moctezuma-Huasabas Hwy on road to Tepache, 635 m, 14 Sep 2006, *Van Devender 2006-802*.

**UNITED STATES: ARIZONA. Cochise Co.**: W side of Peloncillo Mts., across road from Cottonwood Creek Cemetery, 12 Sep 1987, *Kluever s. n.* (ARIZ); W side of Peloncillo Mts., across road from Cottonwood Cemetery, 7.5 mi E of Guadalupe Canyon turnoff, 4550 ft, 9 Aug 1990. *Warren 90-16* [with Kluever] (ARIZ, ASU, TEX)).

Van Devender (pers. comm.) has provided the following comments regarding its habitat at the type locality and surroundings:

> The new species is found in the basalt lava plains along Sonora Highway 117 between Moctezuma and Tepache in the Municipio de Moctezuma. Lava plain starts at 17.3 km SSE of Moctezuma and extends 12.6 km before dropping into the Rio Tepache about 7 km N of Tepache. The lava plains are a very unusual habitat with medium to small black basalt rocks in a matrix of dark brown, clay rich soil. The vegetation is foothills thornscrub, although the plants are often widely spaced and of smaller stature compared to the same vegetation on rocky slopes. Dominants include various

legumes (*Acacia cochliacantha, A farnesiana, A. occidentalis, Haematoxylon brasiletto, Parkinsonia praecox*, and *Prosopis velutina*), tree ocootillo (*Fouquieria macdougalii*), guayacan (*Guaiacum coulteri*), organpipe cactus (*Stenocereus thurberi*), and a prickly pear (*Opuntia* sp.). In the summer rainy season, the combination of rocky substrate and rich soil yields a profusion of annual and perennial herbs. The basalt lava flowed south and west from Cerro Blanco about 500,000 years ago into the late Pleistocene (Mead et al. 2006), providing a maximum time for the isolation of the new species.

*Melampodium moctezumum* is seemingly closely related to both *M. appendiculatum* and *M. cupulatum* but differs in having leaves petiolate with markedly venose blades, their margins lobate to irregularly serrate (vs sessile, weakly venose and margins entire). The characters called to the fore and its relative geographical isolation suggest specific status for the taxon; at least no intermediates between the several taxa were detected among the numerous specimens of *M. appendiculatum* and/or *M. cupulatum* on file at LL, TEX. Distribution of these taxa is shown in Figs. 2 and 3.

Collections of *M. moctezumum* from the U.S.A. have somewhat larger heads with longer rays but otherwise appear very similar to the Mexican collections.

According to its collectors, the florets of *M. moctezumum* are "orange-yellow" and the plants are said to be locally "abundant." The species is named for the Municipio of Moctezuma, where first collected.

## ACKNOWLEDGEMENTS

I am grateful to ARIZ and ASU for the loan of specimens; to my colleague, Guy Nesom, for the Latin diagnosis and reviewing the paper; and to my colleague Tom Van Devender for his insistence that the taxon had some sort of biological reality.

## LITERATURE CITED

Mead, J.I. et al. 2006. Tropical marsh and savanna of the late Pleistocene in northeastern Sonora. Southwestern Naturalist 51: 226-239.

Fig. 1. Holotype of *Melampodium moctezumum*.

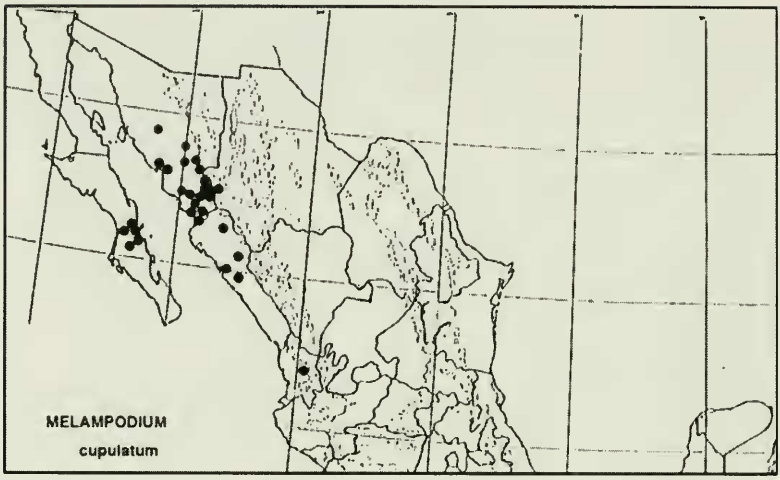


Fig. 2. Distribution of *Melampodium cupulatum*.

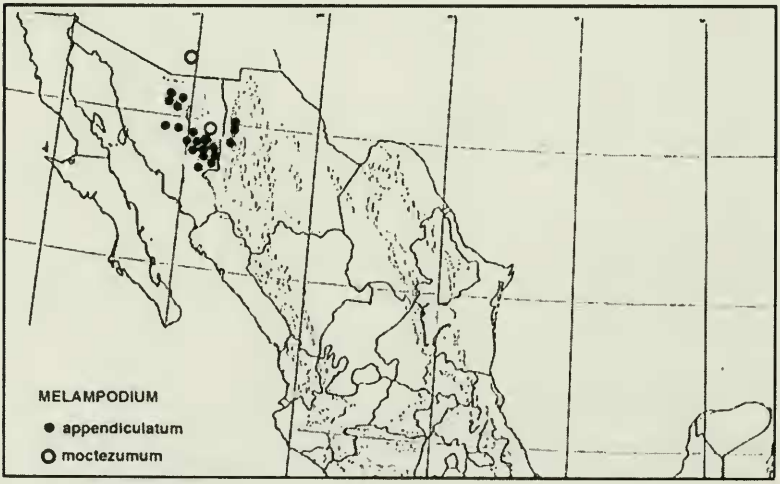


Fig. 3. Distributions of *M. appendiculatum* (closed circles) and *M. moctezumum* (open circles).